FIG. 1

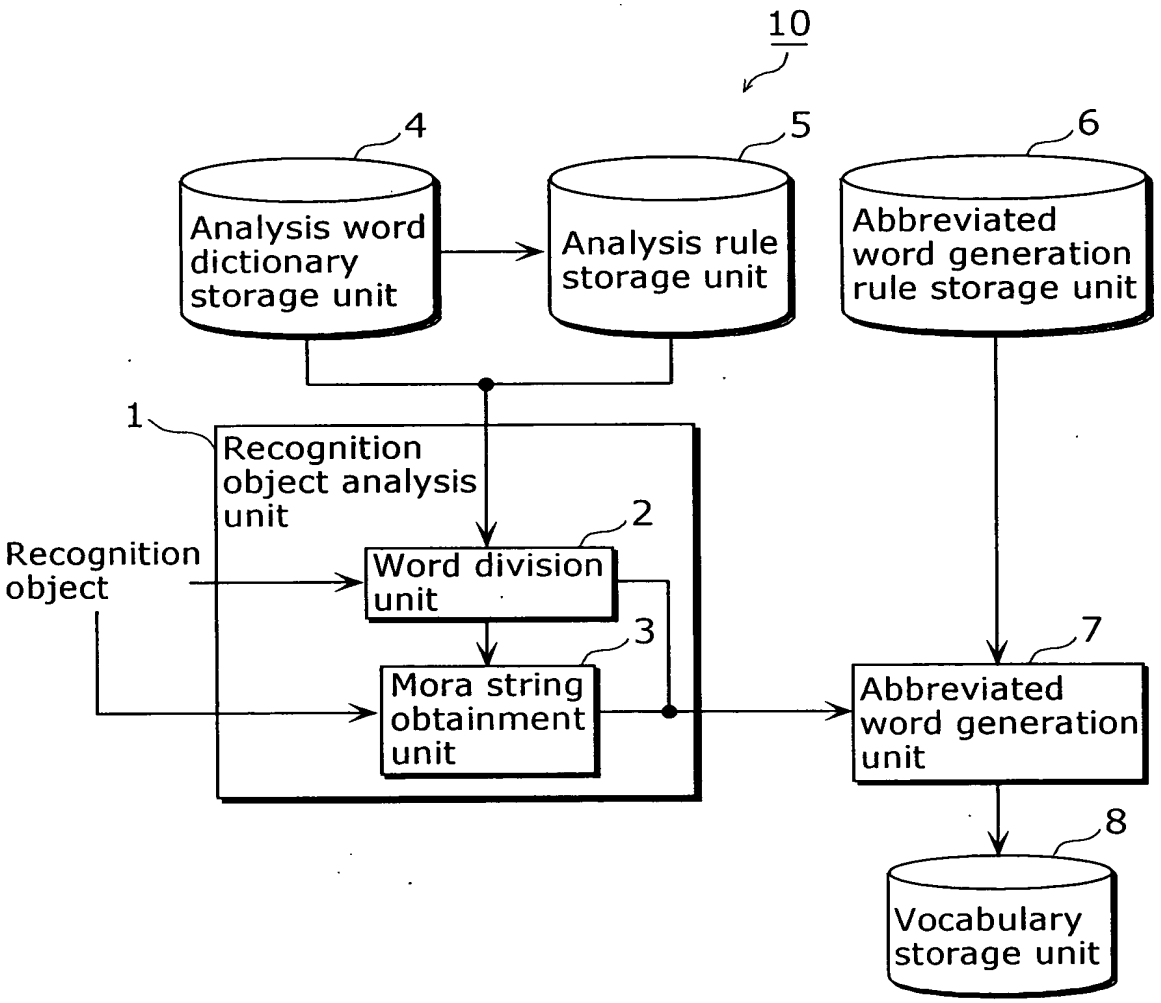

10
4
5
6
Analysis word dictionary storage unit
Analysis rule storage unit
Abbreviated word generation rule storage unit
1
Recognition object analysis unit
2
Word division unit
Recognition object
3
Mora string obtainment unit
7
Abbreviated word generation unit
8
Vocabulary storage unit

FIG. 2

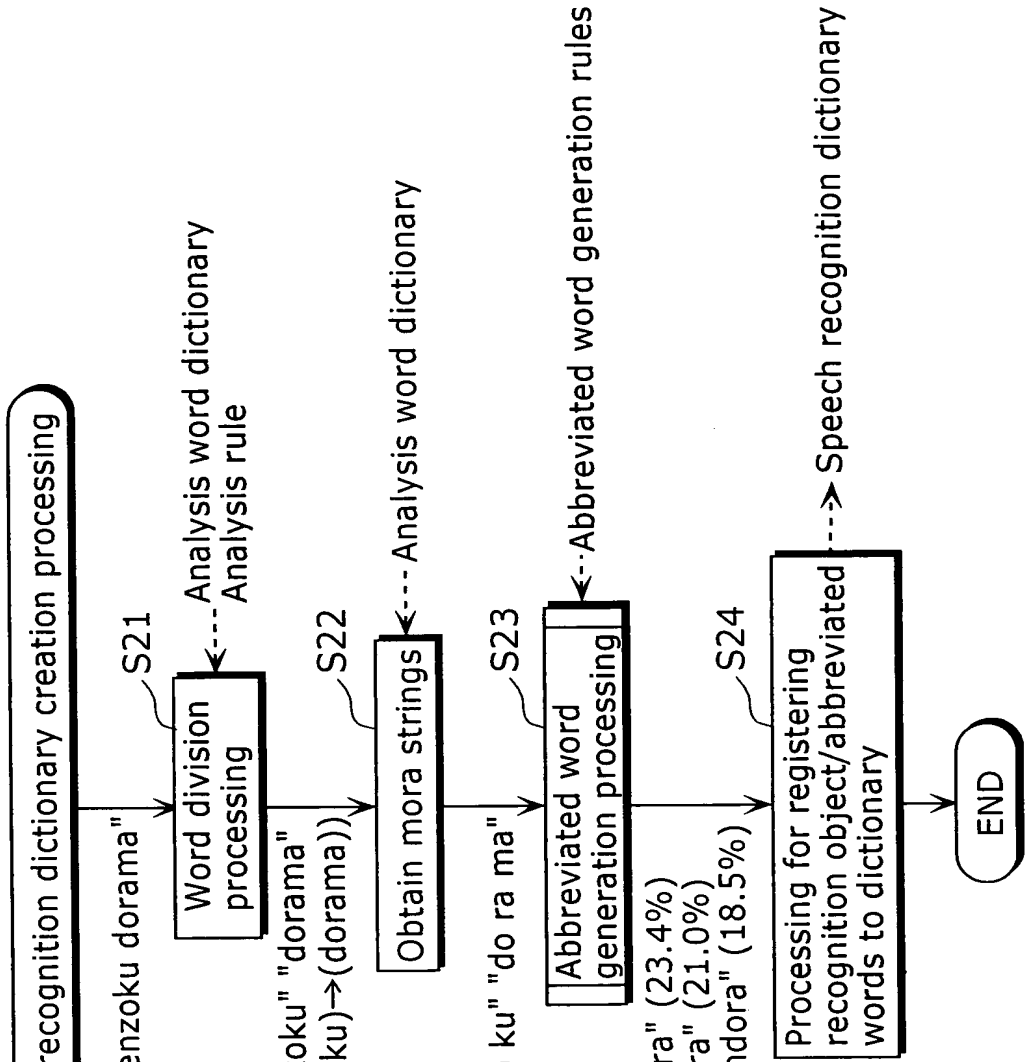

Speech recognition dictionary creation processing
"asa no renzoku dorama"
S21
Word division processing
Analysis word dictionary
Analysis rule
"asa" "no" "renzoku" "dorama"
(asa)→((renzoku)→(dorama))
S22
Obtain mora strings
Analysis word dictionary
"a sa" "no" "re n zo ku" "do ra ma"
S23
Abbreviated word generation processing
Abbreviated word generation rules
"asadora" (23.4%)
"rendora" (21.0%)
"asarendora" (18.5%)
S24
Processing for registering recognition object/abbreviated words to dictionary
Speech recognition dictionary
END

FIG. 3

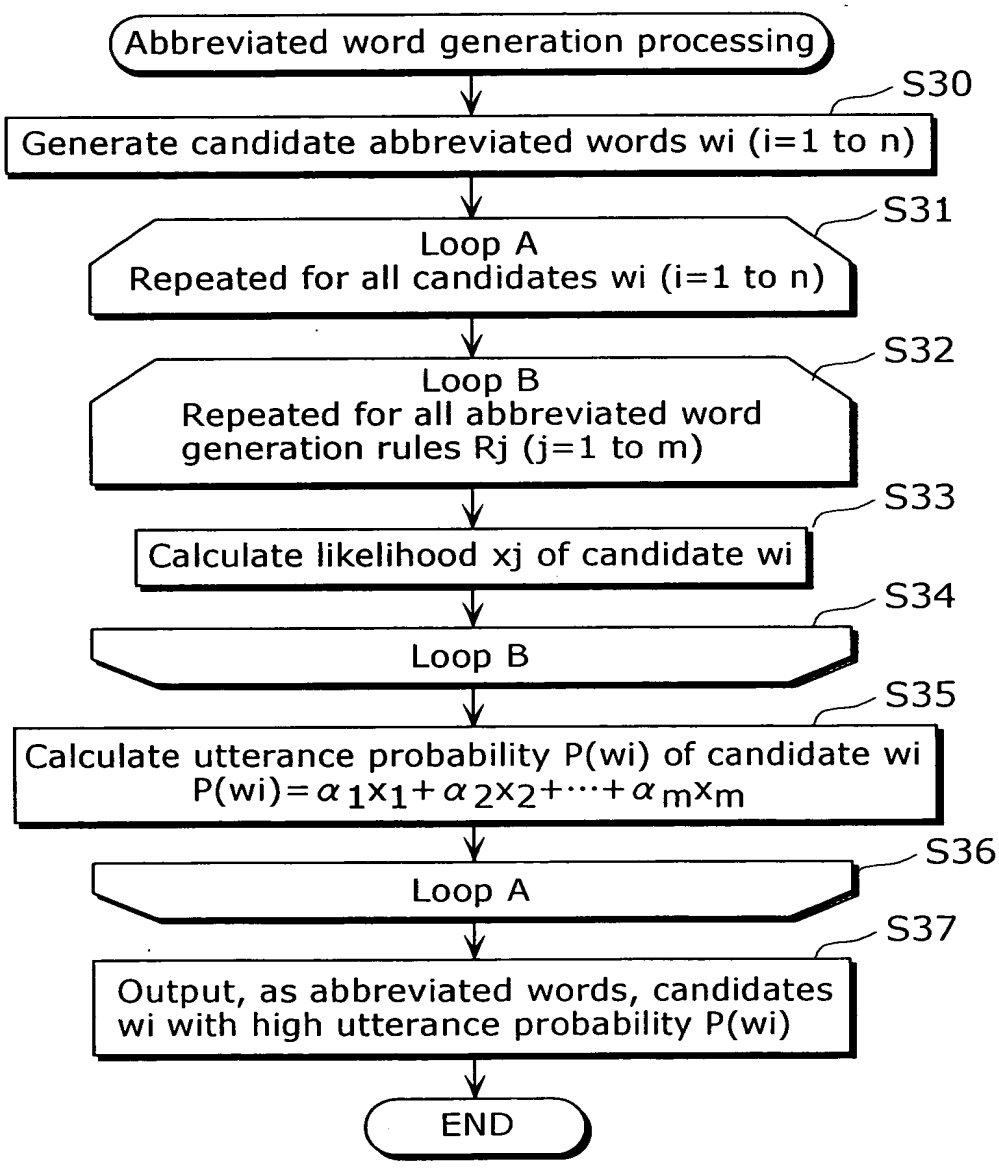
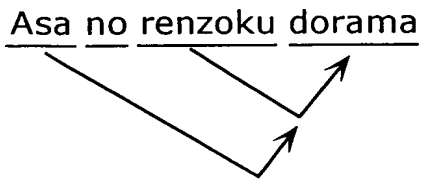

Abbreviated word generation processing
S30
Generate candidate abbreviated words wi (i=1 to n)
S31
Loop A
Repeated for all candidates wi (i=1 to n)
S32
Loop B
Repeated for all abbreviated word generation rules Rj (j=1 to m)
S33
Calculate likelihood xj of candidate wi
S34
Loop B
S35
Calculate utterance probability P(wi) of candidate wi
P(wi)=α1x1+α2x2+…+αmxm
S36
Loop A
S37
Output, as abbreviated words, candidates wi with high utterance probability P(wi)
END

FIG. 4



renzoku dorama

asa dorama

asa renzoku dorama

Candidate abbreviated word	Likelihood x1 for Rule 1	Likelihood x2 for Rule 2	Likelihood x3 for Rule 3	...	Utterance probability
renzoku dorama	0.064	0.032	0.024		0.041
renzoku dora	0.064	0.047	0.024		0.032
ren dorama	0.102	0.082	0.050		0.082
ren dora	0.102	0.128	0.050		0.234
⋮	⋮	⋮	⋮		⋮
asa dorama	0.102	0.072	0.050		0.104
asa dora	0.102	0.145	0.050		0.210
asa do	0.102	0.044	0.050		0.021
⋮	⋮	⋮	⋮		⋮
asa renzoku dorama	0.054	0.033	0.024		0.008
asa renzoku dora	0.054	0.089	0.024		0.054
asa ren dorama	0.100	0.095	0.050		0.083
asa ren dora	0.100	0.117	0.050		0.185
⋮	⋮	⋮	⋮		⋮

FIG. 5

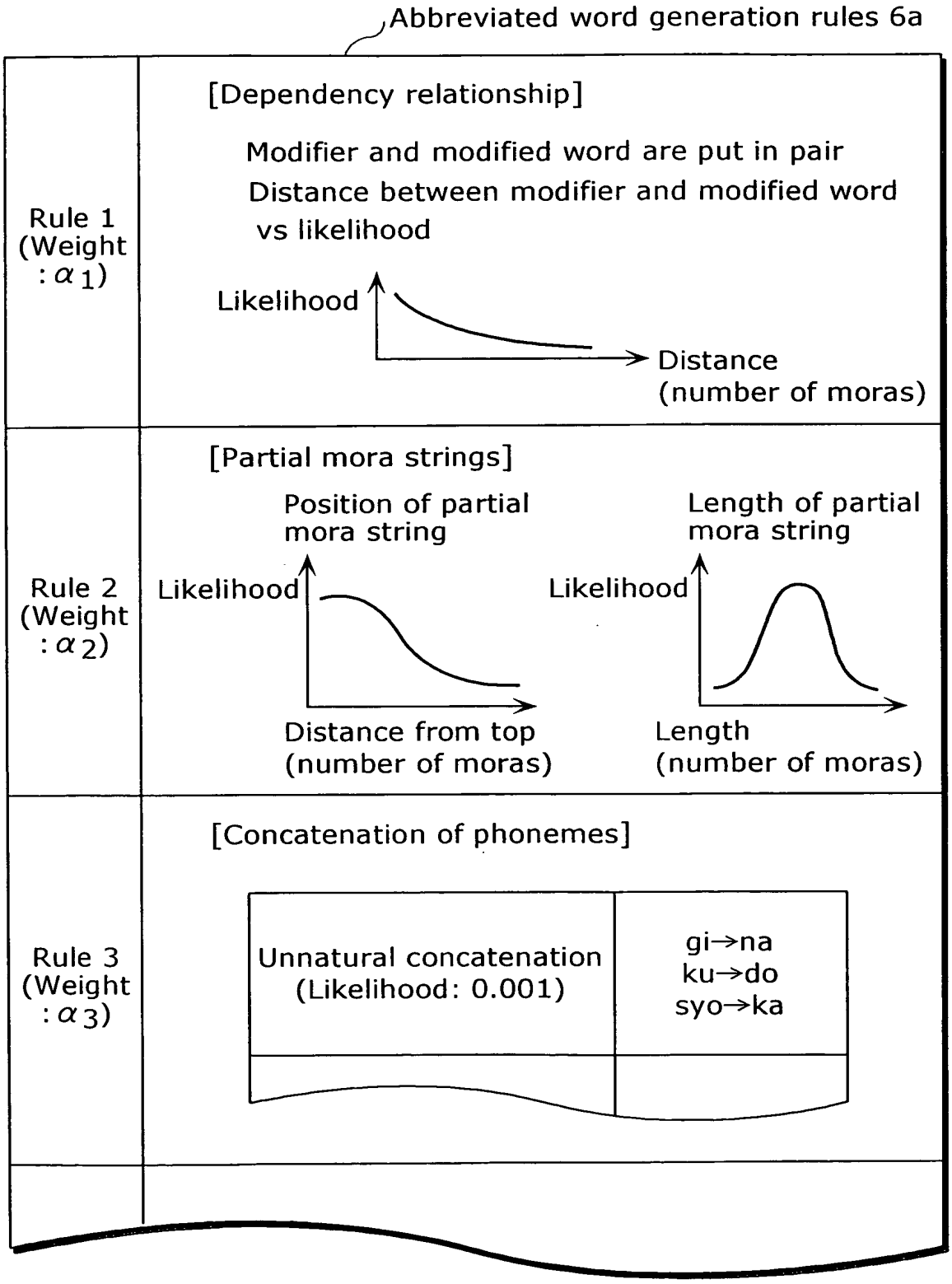

Abbreviated word generation rules 6a
Rule 1 (Weight : α1)
[Dependency relationship]
Modifier and modified word are put in pair
Distance between modifier and modified word vs likelihood
Likelihood
Distance (number of moras)
Rule 2 (Weight : α2)
[Partial mora strings]
Position of partial mora string
Likelihood
Distance from top (number of moras)
Length of partial mora string
Likelihood
Length (number of moras)
Rule 3 (Weight : α3)
[Concatenation of phonemes]
Unnatural concatenation (Likelihood: 0.001)
gi→na
ku→do
syo→ka

FIG. 6

Speech recognition dictionary 8a

Recognition object	Abbreviated word	Utterance probability
"asa no renzoku dorama"	rendora	0.234
	asadora	0.210
	asarendora	0.185
. . .	. . .	. . .

FIG. 7

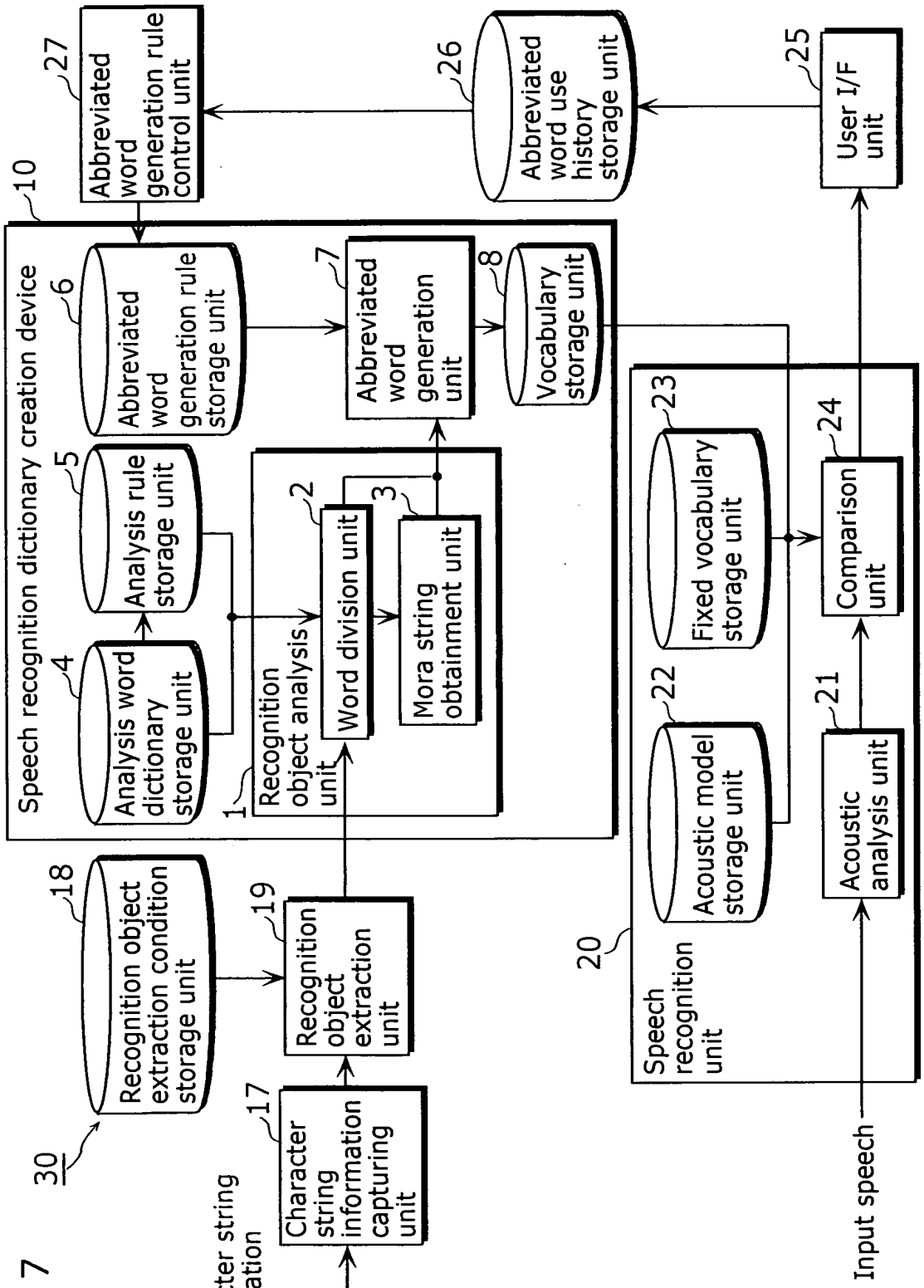

Speech recognition dictionary creation device
10
Abbreviated word generation rule control unit
27
Abbreviated word use history storage unit
26
User I/F unit
25
Abbreviated word generation rule storage unit
6
Abbreviated word generation unit
7
Vocabulary storage unit
8
Analysis rule storage unit
5
Analysis word dictionary storage unit
4
Recognition object analysis unit
1
Word division unit
2
Mora string obtainment unit
3
Fixed vocabulary storage unit
23
Comparison unit
24
Acoustic model storage unit
22
Acoustic analysis unit
21
Speech recognition unit
20
Recognition object extraction condition storage unit
18
Recognition object extraction unit
19
Character string information capturing unit
17
30
Character string information
Input speech

FIG. 8

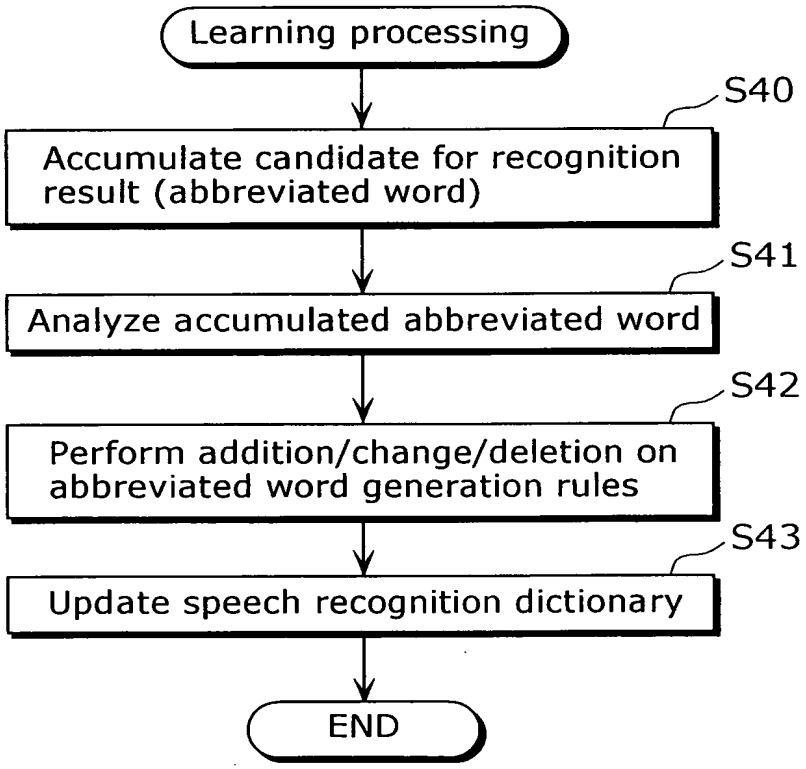

Learning processing
S40
Accumulate candidate for recognition result (abbreviated word)
S41
Analyze accumulated abbreviated word
S42
Perform addition/change/deletion on abbreviated word generation rules
S43
Update speech recognition dictionary
END

FIG. 9A

41
40
Digital broadcast receiver (STB)
Character string information (Electronic program data)
CH
4
6
7:00 ~ 7:30
"Morning News"
"asa no renzoku dorama"
Rendora ni kirikae
42

FIG. 9B

"rendora ni kirikae"
Variable vocabulary "asa no renzoku dorama"
Fixed vocabulary "kirikae"
Currently received program is switched to Channel 6

FIG. 10A

Recognition object	Abbreviated word
全国人民代表大会	全人代
北京大学	北大
清華大学	清大
公共汽車	公車
:	:

FIG. 10B

Recognition object	Abbreviated word
Electric intelligence	ELINT
Elizabeth	Eliz Eliza
Eleanor	Ella
Frankfurter	Frank
Coop for American Remittance Europe	CARE
James	Jim
Joseph	Jock
Joseph	Joe
Kitten	Kit
Mississippi	Miss
Tactical an navigation	TACAN
:	: